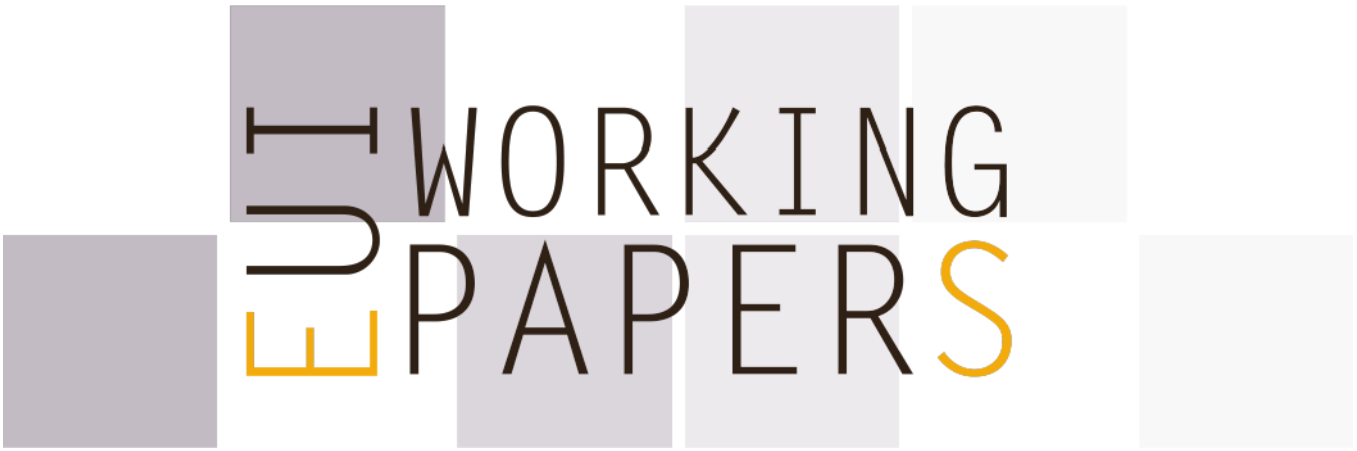
The role of the state as controlling shareholder in the telecoms: Incentive versus entrenchment theory



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Abstract

In this study we investigate the role played by the state as controlling shareholder in setting CEO incentives. Analyzing listed telecommunication companies from 13 European countries during 1999-2013, we measure the difference between the state and a private dominant shareholder in setting CEO compensation packages. We find that state control curbs the level of CEO compensation and this effect weakens as the state's ownership stake increases. When we focus on CEO incentive compensation, we report that CEO pay for performance sensitivity is higher for state controlled firms than for private firms. However, as the state's ownership stake increases, differences in sensitivity tend to disappear, but the effect of governance variables commonly used to proxy entrenchment becomes statistically significant.

Keywords

CEO compensation, State-controlling shareholder, Incentive Theory, Entrenchment Theory, Telecoms.

JEL Classification: G34

1. Introduction

CEO compensation has recently sparked an intense debate around the world. Murphy (1999) documents that the number of academic papers focused on executive compensation has risen consistently over the last two decades. Excessive pay and corporate scandals have shaking also media and public attention, suggesting that the design of the CEO pay structure deserve a closer scrutiny. Also in the telecommunication industry, CEO remunerations have attracted a lot of attention by media and public opinion in the US and in the EU[1].

This study attempts to link CEO pay for performance sensitivity with the controlling shareholders. In particular, we examine CEO compensation packages and how controlling state shareholders influence the level and the structure of CEO compensation in European telecommunication companies. Telecommunication industry offers an interesting setting to explore this relationship. Since '80s, governments have liberalized this sector and most of the companies have been privatized. Today the industry appears to be the most competitive and liberalized industry compared to electricity, gas and water sectors (Torres and Baciller, 2013; Mediobanca, 2015). Privatization and liberalization lead European telecoms to make decisions to increase their efficiency as any other competitive company. However, telecoms exhibit an interesting ownership structure. In spite of the privatization wave, it is well known that governments are still the controlling shareholders of many telecom companies. Such liberalized market and ownership structure allow us to test the effect of private or public owners on CEO incentives and it helps to better explain the effects of CEO compensation under the light of the incentive theory or the managerial power view. The intra-industry analysis helps to isolate the influences of other industry-specific factors that may affect CEO compensation packages. Specifically, we focus on European publicly listed fixed telecom operators, i.e. very large companies which typically used to be state-owned incumbents before the privatization and the liberalization of the industry. This set of firms allows us to study the potential impact of private or state ownership on CEO incentives.

CEO compensation has been considered as a powerful tool to attract, discipline and motivate managers. The corporate governance literature explains CEO compensation by referring to two main theories: incentive theory, or *optimal contracting theory,* (Jensen and Murphy, 1990; Core and Lacker 2002) and managerial power theory or *entrenchment view* (Bebchuck and Fried, 2003; 2006; Weisbach 2007). According to the incentive theory, CEO compensation packages, that tie CEO wealth to shareholders' value, can be a powerful incentive for CEOs. Such governance mechanism (called pay for performance sensitivity) allows the alignment of CEO's interests with those of the shareholders and aims to reduce the agency problems between managers and shareholders.

Alternately, the entrenchment view considers CEO compensation as part of the agency problem (Bebchuk and Fried, 2003; 2006; Weisbach 2007; Croci et al., 2012). CEO has the power to control the board and set his own compensation. Exploiting his influence on the board, CEO can obtain compensation packages that increase his salary regardless of firm performance (Gompers et al., 2003; Bebchuk et al., 2009).

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[1] "Telecoms operators are cash rich and seem not to worry about the amounts they pay top executives. There are no formulas and companies have to ensure they don't annoy their customers" (GTB-Global Telecoms Business, 16 February 2014). See also: "As the stock prices of European phone companies sink ever lower, chief executives' compensation is increasing. That is because troubled telecommunications operators are finding that they need to pay more to attract fresh talent willing to parachute into some of the biggest messes in the corporate world. The latest example is France Telecom SA. The French operator, with debts […] that are seven times the company's stock-market value, Wednesday named Thierry Breton chief executive officer. His pay will be several times that of his predecessor, Michel Bon, ousted last month for failing to move aggressively enough to reduce that debt load after a series of acquisitions. The richer pay package partly reflects a realization of how hard it will be to turn around the likes of France Telecom and how risky it is to jump into such a situation". Wall Street Journal, 3 October 2002

In this context, dominant shareholders have a strong governance role. Shleifer and Vishny (1997) suggest that controlling shareholders can provide an effective monitoring. They have enough voting rights to put pressure on the management and, in some cases, exert control over the assets of the firm to have their interests respected (p. 755). Wright and Lockett (2003) and Schnatterly et al. (2008) show that the largest shareholder has access to preferred information and, thereby it may be particularly effective in monitoring, disciplining and influence the management. Increasing their monitoring, controlling shareholders may discipline the classical agency problem between managers and shareholders.

However, increased shareholding by controlling owners is not an unequivocally positive force. It may provide entrenchment against small investors (Claessens et al., 2002; Ding et al., 2007). Dominant owners can use their influence to induce management to make decisions that increase controlling shareholders' benefits. Thus, the ultimate effect of controlling shareholders depends upon the trade-off between the benefits of control and any private extraction of firm value (Denis and McConell, 2003).

A growing literature suggests that ownership concentration may no matter as much as the type of owners (Lehmann and Weigand, 2000; Aguilera et al., 2006; Muller-Kahle, 2015). Aguilera et al., (2006) argue that different types of shareholders have significantly different strategies and offer distinct pressure on the firm (p. 150). In the world's wealthiest economies, most of the largest companies are controlled by families or states (LaPorta et al., 1999, 2002; Claessens et al., 2002; Ding et al., 2007). Among others, government ownership represents an interesting case to study. Shleifer and Vishny (1997) point out the governance implications of state-owned firms. State-owned firms are technically ''controlled by the public," but they are run by political bureaucrats who can be considered as having ''extremely concentrated control rights, but no significant cash flow rights." Cash flow rights are dispersed among the many taxpayers in a particular country (Cornett et al., 2010). This means that state-owned firms are hybrid of dispersed and concentrated ownership. If we view the government as a single entity, state-owned corporations have concentrated ownership. Since government ownership is funded with money of taxpayers, in this regard, the ultimate ownership of state-owned companies is quite dispersed (Denis and McConnell, 2003, p. 3). Moreover, political bureaucrats have goals that are often dictated by political interests that may be in conflict with social welfare improvements and shareholders' maximization (Shleifer and Vishny, 1997; Cornett et al., 2010). This suggests that state-owned firms exhibit extra agency relationships compared to private firms (Ding et al., 2007; Calabrò et al., 2013).

Performance-based incentive payment schemes provide a crucial mechanism to alleviate the owner–manager conflict. The conventional wisdom is that the presence of a dominant shareholder could strengthen the pay-performance sensitivity of executive compensation, as a large stake in the company motivates the controlling shareholders to monitor managers through incentive compensation contracts (Hartzell and Starks, 2003). However, the efficiency of such incentive contract remains a puzzle when the controlling shareholder is the government (Anchian, 1977; Shleifer, 1998).

In our paper we aim to answer to the following questions: (1) How sensitive is the CEO compensation to firm performance in telecommunication companies? (2) What is the impact of dominant state owner on CEO incentive compensation in these companies?

Our findings provide general support for both the incentive effect and the entrenchment effect of the state as controlling shareholder within telecommunication companies. In fact, we find that CEO compensation is sensitive to firm performance. Specifically, the results show that an increase of 10% in market capitalization leads to an increase of 2.2% in CEO compensation and an increase of one point percent in ROA leads to an increase of 3% in CEO compensation. In addition, we document that CEO characteristics, such as CEO age, CEO tenure and CEO duality, influence the level of CEO compensation. When we consider the type of controlling shareholder, we find that state control reduces the level of CEO compensation and this effect is weaker as the state ownership increases.

Further, we report that pay for performance sensitivity is higher for state-controlled firms and we document that as the state control increases, we do not observe a significant difference on CEO pay for performance sensitivity between state-controlled firms and private controlled firms. Interestingly, however, as state control increases, the governance variables that measure the entrenchment effect become statistically significant.

These findings have important policy implications. State control, which is one of the common features in many telecommunication companies, might limit the high levels of CEO compensation, avoiding rent-expropriation from minority shareholders and taxpayers. Our result documents also that state-owned telecommunication companies have a higher pay for performance sensitivity than private telecommunication companies, but only up to the 25% threshold of state ownership. However, this positive effect becomes weaker as the state becomes the 50% majority shareholder. Moreover, as the state controlling share increases to 50% or more, governance variables that are proxy of entrenched CEO are statistically significant. This suggests that under government's control, CEOs are significantly more likely to become entrenched with the dominant shareholder (the state), i.e. the CEOs succeed in exploiting his/her power, setting his/her own level of compensation regardless of firm performance. This implies that in state-owned telecommunication companies, compensation is set to motivate the CEO *(incentive effect).* As the state control increases, the *entrenchment effect* becomes dominant.

The reminder of the paper is organized as follows. The next session provides a summary view of the literature (Section 2). Section 3 describes the potential problems of CEO pay and incentives in telecoms companies. Section 4 presents the data and the sample. Session 5 discusses the methodology and the econometric model. Session 6 reports the main findings and Session 7 concludes, showing study limitations and implications for theory and practice.

2. Literature review and hypothesis development

This study is underpinned by two main theories: incentive theory and entrenchment view. We start with a brief overview of the literature and then we review the effects of state as dominant shareholders.

2.1 Incentive theory

Agency theory was developed by the seminal works of Berle and Means (1932), Jensen and Meckling (1976) and Fama and Jensen (1983). They point out that when ownership and control are separated, the conflict of interests between shareholders and managers arise. Managers can make decisions aimed at the maximization of their own utility instead of shareholders' wealth. Specifically, managers may misuse corporate assets for their own personal benefits at the expense of shareholders.

One of the governance mechanisms that may decrease the agency costs is CEO pay for performance. Compensation policies, that tie CEO welfare to shareholder wealth, can be a powerful tool to discourage managerial opportunistic behaviors and decrease conflicts between managers and shareholders (Jensen and Murphy, 1990; Shleifer and Vishny, 1997). There is a vast literature that documents the relationship between CEO compensation and firm performance around the world and they highlight the relevance of the compensation in providing incentives for CEOs. Among others, Hall and Liebman (1998), Guay (1999); Frydman and Saks (2010) document that this relationship in US companies. Other studies show the differences in CEO compensation packages among different countries (Abowd and Bognanno 1995; Muslu, 2010; Conyon et al. 2011; Fernandez, et. al, 2013). An interesting study is provided by Croci et al., (2012): looking at only Continental European companies, they show that in continental Europe, the differences in the level of CEO compensation depend on the ownership structure. They report differences between family controlled firms and institutional ownership. This result suggests that the type of controlling shareholder influence CEO incentives.

2.2 Entrenchment view

An alternatively view is the entrenchment theory. Bebchuk and Fried (2004) argue that executive pay practices cannot be explained by a model in which shareholders contract optimally with shareholders. Rather, they point out that CEO effectively sets his own pay. The idea is that the CEO has a good deal of control over the board, and this control includes the power to set a large part of his own compensation (Weisbach, 2007). There are a number of reasons why the board is likely to consider the CEO's interests rather than the interests of the shareholders. Bebchuk and Fried (2004) document cases in which the board of directors is influenced by its CEO. In the existing literature, a number of different explanations has been given for CEO entrenchment. CEO duality and CEO tenure are usually considered relevant for CEO entrenchment. CEOs, who also retain the position of chairman, will tend to have a greater influence over the selection of board members. For example, a powerful CEO may try to appoint non-executive directors who are unlikely to question proposals and business decisions, or he/she could reduce the disclosure of information to other board members (Hardwick et al., 2011).

Stulz (1988) proposed a theoretical model of the entrenchment, which predicts a relationship between managerial ownership and firm value. Specifically, he shows that an entrenched manager pursues his/her private interests at the expense of outside investors. Morck et al., (1988) and McConnell and Servaes (1990) empirically prove such relationship.

Similar results are in the case of firms with a controlling shareholder. Shleifer and Vishny (1997) point out that controlling shareholder may increase the entrenchment effect. They argue "large investors may represent their own interests, which need not coincide with the interest of other investors in the firm" (p. 758). Controlling shareholders can expropriate wealth from minority shareholders in several ways (Morck and Yeung, 2003; Bertrand and Schoar, 2006; Croci et al., 2012) including executive compensation.

2.3 Combining incentive theory and entrenchment view: State as controlling shareholder

When ownership is concentrated in the hand of one owner that has the effective control of the firm, as in the case of most countries in the world (La Porta, 1999; Claessens et al, 2002; Faccio and Lang, 2002), the incentive effect or the entrenchment effect of controlling shareholder becomes an issue. The incentive effect of controlling shareholders refers to the argument that controlling shareholders exert greater monitoring on management, reduce agency conflicts, and maximize firms' value (Shleifer & Vishny, 1997; Chen et al., 2010). In contrast, the entrenchment effect of controlling shareholders refers to the argument that controlling shareholders have incentives to maximize their own benefits at the cost of minority shareholders (Shleifer & Vishny, 1997). Several studies identify large shareholders as a key mechanism to curb agency costs and increase monitoring on management (Muller-Kahle, 2015). Other research shows the entrenchment effect of large shareholders, for example, using pyramidal groups and crossholdings makes difficult for minority shareholders to detect actions that benefit the controlling shareholders or select board members that are more likely to monitor and are less likely to support the dominant owner (Chen et al., 2010). Overall the empirical findings examining the impact of dominant owners is mixed (Glassman and Rhoades, 1980; Demsetz and Lehn, 1995; Claessen et al, 2002; Dalton et. al, 2003).

The agency theory and the entrenchment view may be exacerbated by the type of dominant shareholders. In state-owned firms there is an extra agency relationship as the controlling owners are themselves agents of the true owners: the state (Ding et al., 2007, p. 228). Most studies have found that state-owned firms do not better serve the public interest (i.e., Grossman and Krueger, 1993) and, in fact, that state-owned firms are typically extremely inefficient (Boycko et al., 1995; Dewenter and Malatesta, 2001). Additionally, political bureaucrats often have goals that are in conflict with social welfare improvements but are dictated by political interests. This suggests that, in state-owned firms, agency costs are relevant because of the perverse incentives of managers/bureaucrats of state-owned firms.

In the recent years there has been a growing pressure on politicians to limit the excess in the management pay. State-owned firms can be easily forced to restrict the CEO compensation especially in companies considered as "strategic" for national interests, where a more efficient scrutiny of managerial decisions is expected (Barontini and Bozzi, 2011). As suggested by Joskow, Rose and Wolfram (1996), and Cambini, Rondi and De Masi (2015), in many utilities, particularly if they are controlled by a national or local government, political constraints may impose a cap on the level of CEO compensation. Since directors are politicians, or they are appointed by politicians, they are under public opinion pressure, and they may be reluctant to allow high level of compensation. Consistently with this view, we expect that CEO compensation is lower in companies with state controlling owner.

Controlling shareholders influence both the level of CEO compensation and the pay-for-performance link. In Europe, several countries have introduced shareholders' vote on executive compensation packages (Barontini et. al., 2013; Ferri and Maber, forthcoming). State, as controlling shareholder, might reduce its monitoring if the entrenchment view prevails. If the state effectively controls the decisions of firms, the optimal contracting induces to set a higher pay-for-performance sensitivity. The net effect remains a puzzle.

3. Telecommunication companies and the problem of setting the right incentive

The issue of setting the right incentive for the CEO is a common problem in every company. Because of the peculiarities of telecommunication industry, in the telecoms this issue becomes more relevant than in other companies. First, telecommunication companies typically (have to) invest in innovative projects to stay competitive. A number of recent innovations have been characterized this industry after the liberalization. However, by definition innovations are risky, unpredictable, long-term and multistage, labor intensive and idiosyncratic (Holmstrom, 1979). They are risky because the probability of failure is high. They are unpredictable because the future contingencies are impossible to predict. They are long-term and multi-stage, because a project takes time to be developed and it needs multiple stages. They are labor intensive because all stages require substantial human effort, and lastly, they are idiosyncratic because it is difficult to compare an innovative project with others. All these features raise the problem to give the right incentives to the CEO to push him to undertake projects which are innovative and profitable for the firm. As consequence, CEO pay for performance sensitivity might be higher in telecommunication companies than in other companies to meet the higher risks and the higher volatility as well as technological challenges of the industry (see footnote 1 for an example from France Telecom).

Second, CEOs of the telecoms are usually younger than CEOs of other companies (Anderson, Banker and Ravindran, 2000). In corporate governance literature, CEO age is typically a proxy of experience: the older is the CEO the more experienced he/she is supposed to be. The experience reveals also CEO competences. Since a young CEO can be less competent than an old CEO, firms might prefer to pay their young and less experienced CEOs with a higher pay for performance sensitivity. However, in the telecoms industry a younger CEO may be viewed as more open to technological innovation and more flexible to change. In contrast, as also suggested by the literature, old CEOs may be less concerned about the long-term consequences of their decisions. All in all, for these reasons, CEO pay should be negatively related to his/her age. Third, in the telecommunication industry the managerial labor market is very dynamic. This should make change as well as CEO turnover more likely. CEO turnover should be controlled for, since in the year of dismissal or quit, the exiting CEO's pay increases.

Fourth, most of the fixed telecommunication operators are large-sized. They are ex-incumbents or they have expanded recently thanks to merger and acquisition with other firms. Rosen (1982), Murphy (1999), Gabaix and Landier (2008), and Barontini and Bozzi (2011) show that talented managers prefer large firms. This suggests that the level of CEO compensation in telecoms should be high.

Fifth, in telecommunication companies the agency costs due to the separation between ownership and control may be very relevant. Specifically, in firms with dispersed ownership and high growth opportunities as telecom companies, managers are more likely to behave opportunistically than in other firms. In this setting, CEO incentive compensation is a powerful mechanism to reduce the agency problem and induce CEO to take profitable decisions (even though the literature and the anecdotal evidence has shown that this instrument may also reveal undesirable effects, see Bebchuck and Fried, 2003 and 2006).

Sixth, European telecommunication companies have an interesting ownership structure. After the liberalization and the privatization some of these firms many went public, opening their capital both to new investors and to various categories of shareholders that naturally aim to maximize firm value. However, although these firms have been privatized, the state-ownership remains a common feature among many telecoms. A private or a state owner may have different objectives and may set different incentives for the CEOs. For example, Shleifer (1998) argues that public firms are characterized by lower incentive to reduce costs and they have a stronger tendency to transfer resources from the state-owned firm to political supporters. On the other hand, some contributions support an opposite thesis. Vickers and Yarrow (1991) document that the agency problem, that generates divergence between principals' and managers' objectives, applies whatever the nature (private or public) of the principals themselves.

Because of all the peculiarities of telecommunication companies and the unclear effect on CEO incentives is worth analyzing the context of European telecommunication companies.

4. Sample and Data

Empirical studies on CEO compensation in Europe suffer from availability of data on management pay. For a long time, such information has been not subject to mandatory disclosure (Barontini et. al., 2013; Ferarrini 2015). Only recently, many European countries introduced regulations on transparency and disclosure. Our study benefits from a unique database on CEO compensation for an unbalanced panel of over the period 1999-2013, jointly with detailed data about performance, corporate governance and ownership structure of the telecommunication companies.

Data on compensation and other governance variables have been hand-collected from annual reports published by the companies. Financial and accounting data are drawn from Worldscope Database. We require companies with compensation data from annual report to have available financial data from Worldscope. To control for country-economic differences, we include data on GDP which has been downloaded from OECD database. Our final sample accounts for 15 publicly traded companies in the telecommunication industry from 13 European countries (Austria, Belgium, Denmark, Finland, France, Germany, Italy, Holland, Poland, Portugal, Spain, Sweden and The United Kingdom).

CEO compensation is a key variable for this study. Following Jensen and Murphy (1990), we calculate CEO compensation as the sum of salary and bonus awarded by the CEO at the end of the year. This data are adjusted by inflation. A comprehensive measure of CEO pay should consider the values of the CEO’s stock option. Unfortunately, this data was not available for all firms on a consistent basis. Specifically, when we tried to collect the data and we found that for most of the telecommunication companies in our sample, information about stock options (i.e., the number of options, the exercise price, the exercise date etc.) are not fully disclosed. Because we could only rely on a partial, approximate picture of the real effect of stock options, we decided to exclude them (this partial information would only lead to misleading results). Data on “other compensation” includes data of a very different nature such as indemnity paid when the CEO leaves the firm, compensation received from consulting services, executive committee participation fee etc. This data was not

uniformly reported by each company and, because of this lack of uniformity, this data are not included in the CEO compensation variable.

As measures of firm performance, we use two indicators: a market-based and an accounting-based performance measure. The market-based measure is market capitalization, which is the product between the share price at the end of the year and the number of outstanding shares in the market. The accounting-based measure is Return on Assets (ROA), calculated as the ratio of EBIT to total assets.

In order to detect the identity of the ultimate shareholder, we follow Pedersen and Thomsen (2003) and Croci et al., (2012). We collect data about firm ownership. We use two thresholds as a cut off point to identify the dominant owner. The first definition of the state as dominant shareholder is the following: if the state holds, directly or indirectly, 25% of the ownership rights, the firm has the state as controlling shareholder. The second definition of the state as dominant shareholder considers a threshold of 50%. Specifically, if the state holds, directly or indirectly, 50% of the ownership rights, the firm has the state as controlling shareholder.

Since the purpose of the study is to explore the difference between state and private controlling shareholders, we create a dummy variable (1 if the controlling shareholder is the state, 0 otherwise) to capture the type of the ownership. Consistent with Ding et al., (2007), it is important to note that the distinction between controlling right and cash flow right is not an issue in this study. We are interested in the controlling owners of the telecoms and the pyramid structure of ownership is outside of our aim. In creating this dummy we took the following procedure: if the state (government at federal, state or local level) holds 25% or more of the shares of a company, the dummy is equal to 1. Ownership data was hand-collected, downloading the annual reports of each firm.

In testing our hypothesis, we include control variables related to firm characteristics and a set of governance variables that previous studies found to have a significant impact on CEO compensation. Firm size has been considered as one of the most important variables in explaining the level of CEO compensation (Murphy 1999; Gabaix and Landier, 2008; Barontini and Bozzi, 2011). As proxy of firm size, we use Total Revenues.

Concerning the CEO characteristics, we control for variables that are proxies for managerial entrenchment: CEO tenure, CEO duality, and CEO age. CEO tenure is the number of years served as CEO in the company. According to the managerial power theory, with a high tenure, CEO is more likely to influence the board and set his own compensation. CEO duality is another proxy of the managerial entrenchment. CEO duality is a dummy that is equal to 1 if the CEO is also Chairman. If CEO is also Chairman, he/she may use the authority of the board chair role to entrench themselves against accountability (Finkelstein & D'Aveni, 1994). CEO age indicates CEO experience that it may influence the level of compensation.

Table 1 provides the variable definitions. In table 2 we report the descriptive statistics for the full sample and table 3 the telecommunication companies by state-control. The descriptive statistics by country are reported in Appendix A.

Table 1 - Variables description

Variable name	Label	Description	Source
CEO comp	CEO compensation	It is computed as the sum between salary and bonus awarded by CEOs at the end of the year. (Thousands of Euros)	Hand collected
Market Cap	Market capitalization	It is Market Price-Fiscal Period End * Common Shares Outstanding	Worldscope
ROA	Return on Assets	It is calculated as: (Net Income before Preferred Dividends + ((Interest Expense on Debt-Interest Capitalized) * (1-Tax Rate))) / Average of Last Year's and Current Year's Total Assets * 100	Worldscope
Revenue	Total Revenue	It represents gross sales and other operating revenue less discounts, returns and allowances.	Worldscope
Log (Total Asset)	Logarithm of Total Assets	It is the logarithmic transformation (base 10) of Total Assets	Worldscope
State	State as controlling shareholder	It is a dummy that assumes 1 if the state (government at federal, state or local level) holds 25% or more of the shares of a company.	Company websites
State 25%	Government control rights	It is a dummy that assumes 1 if the government holds at least 25% of the ultimate control rights	Company websites
State 50%	Government control rights	It is a dummy that assumes 1 if the government holds 50% of the ultimate control rights	Company websites
CEO duality	CEO duality	CEO duality is a dummy that is equal to 1 if the CEO is also Chairman	Company websites
CEO tenure	CEO tenure	It indicates the number of years served as CEO.	Company websites
CEO age	CEO age	It is the age of the CEO	Company websites
CEO turnover	CEO turnover	It is a dummy equal to 1 if the CEO changes	Company websites
GDP	GDP	GDP of a country in a given year	OECD

Table 2 - Descriptive statistics (Full Sample)

Variable	Obs	Mean	Std. Dev.	Min	Max
CEO compensation	*128*	*3445.98*	*2452.27*	*508.59*	*13871.01*
Market Cap	*128*	$2.75*10^7$	$2.54*10^7$	*135308.3*	$1.05*10^8$
Revenue	*128*	$2.55*10^7$	$2.60*10^7$	*526638.2*	$9.19*10^7$
ROA	*128*	*7.75*	*5.60*	*-14.85*	*27.04*
CEO Tenure	*128*	*3.81*	*2.59*	*1*	*14*
CEO Age	*128*	*53.54*	*7.85*	*38*	*68*
CEO Duality	*128*	*0.38*	*0.48*	*0*	*1*
CEO Turnover	*128*	*0.19*	*0.40*	*0*	*1*
GDP	*128*	*1.18*	*2.38*	*-5.6*	*7.2*

CEO compensation, market cap and revenue are in thousands of 2010 constant dollars. They are adjusted by inflation. CEO tenure is the number of years served as CEO. CEO age is the age of the CEO. CEO turnover is a dummy equal to 1 if the CEO changes. GDP is the GDP growth rate.

Table 3 - Firms by state-control

Variable	Obs	State-controlled (first year)	State-controlled (last year)
Telekom Austria AG	*128*	*1*	*1*
Belgacom SA	*128*	*1*	*1*
TDC AS	*128*	*0*	*0*
Sonera OYJ	*128*	*1*	*1*
Orange SA	*128*	*1*	*1*
Deutsche Telekom AG	*128*	*1*	*1*
Telecom Italia SpA	*128*	*0*	*0*
Koninklijke KPN NV	*128*	*1*	*0*
Orange Polska SA	*128*	*1*	*0*
Portugal Telecom SGPS SA	*128*	*0*	*0*
Telefonica SA	*128*	*0*	*0*
TeliaSonera AB	*128*	*1*	*1*
BT Group	*128*	*0*	*0*
Cable and Wireless	*128*	*0*	*0*
Kcom Group	*128*	*1*	*0*

State control is 1 if the state holds, directly or indirectly, 25% (or more) of the shares.

At the country level, CEO compensation appears to be highest in Spain where firms are very large and CEO tenure is very high. This confirms the typically positive correlation between pay and firm size and between compensation and the years served as CEO. Managers seem to be well paid in Germany, Belgium and (to a lesser extent) Italy, where firms are profitable in terms of ROA and market capitalization.

5. Empirical Models

Pay for performance sensitivity is the relationship that measures the incentive effects of CEO compensation. It is usually defined as a change in CEO pay associated with a change in firm performance (Frydman and Saks, 2010; Goergen and Renneboog, 2011). Empirical studies of pay-to-performance have used a wide range of specifications to measure this relationship. Two common alternatives are the euro change in executive wealth per euro change in firm value (the Jensen-Murphy statistic), and the percentage change in CEO compensation for 1% change in the firm value (the elasticity). The Jensen-Murphy statistic is considered the correct measure of incentives specifically for activities whose euro impact is the same regardless of the size of the firm. Elasticity is widely used because is not highly sensitive to firm size. In addition, it is particularly effective in studies that do not consider revaluation of equity and option holdings (Frydman and Saks, 2010). For all these reasons, we report the logarithmic transformation of CEO compensation in order to estimate the *elasticity* of the sensitivity.

To investigate the CEO pay-for-performance sensitivity in telecommunication companies and the relationship between CEO compensation policies and the type of controlling shareholders, we use the following model:

(1) $Log(CEOcomp)_{it} =$

$$\beta_0 + \beta_1(Performance)_{it} + \beta_2(State)_{it} + \beta_3(Governance)_{it} +$$

$$\beta_4 FirmSize_{it} + \beta_5 GDP_{it} + \mu_i + \epsilon_{it}$$

We rely on two measures of firm performance. The first measure is that of the market capitalization, which is measured as the product between the number of outstanding shares and the value of the share at the end of the year. Since this measure might be influenced by many factors beyond managers' control, we use an accounting-based measure of performance, that is return on assets, or ROA (EBIT to total assets). The coefficient β_1 indicates the incentive effect of CEO compensation. Specifically, higher is the coefficient closer is the alignment of interests between the CEO and his shareholders, and as consequence, stronger is the incentive for the CEO.

To control for firm ownership, we include in the model the variable State that is equal to 1 when the government has, directly or indirectly, the ultimate control. We control also for a set of governance variables that are usually used in the literature to measure the power of the CEO (so called "entrenchment effect"). These variables are CEO duality, a dummy equal to 1 if CEO is also Chairman, and CEO tenure, the number of years served as CEO in the company. We control also for CEO characteristics (CEO age) and CEO turnover that accounts for breaks in the estimation of pay-for-performance.

As mentioned above, CEO compensation may be influenced by firm size (Murphy 1999; Gabaix and Landier, 2008; Barontini and Bozzi, 2011). We include in the model a proxy of firm size (the logarithmic transformation of total revenues). In addition, to control for cross-country heterogeneity in the size and growth of country-economies we include GDP (Gross Domestic Product of the country).

In our second model, we focus on the differences in CEO incentives between state-controlled and private-controlled firms. We interact firm performance with the dummy State that indicates whether the government is the controlling shareholder. We chose two different thresholds to identify the ultimate controlling shareholder. The first threshold is 25%: it allows to establish a blockhoder that may control important decisions. The second threshold is 50%: such majority of the shares helps to identify the effect of controlling shareholder as the ownership increases.

In order to control for the entrenchment effect of controlling shareholder, we interact the governance variables considered proxies of the entrenchment (Croci et al., 2012) and the dummy *State* both at 25% and at 50%. The model is the following:

(2) $Log(CEOcomp)_{it} =$

$$\beta_0 + \beta_1(Performance)_{it} + \beta_2(State)_{it} + \beta_3(Governance)_{it} +$$

$$\beta_4 FirmSize_{it} + \beta_5 GDP_{it} + \beta_6(Performance * State)_{it} +$$

$$\beta_7(Governance * State)_{it} + \mu_i + \epsilon_{it}$$

As estimation method, we use fixed effects. This method allows to calculate the effect of the change in the compensation level within a firm and to control for omitted variables and unobservable firm characteristics that are not included in the usual cross-sectional regressions but that can be controlled by panel data. The results of the regressions are presented in the next session.

6. Results

In this section we present the results of CEO pay for performance sensitivity in the telecommunication companies and the effect of the state as controlling shareholder. Table 4 reports the estimated results for Equation (1).

Table 4 - CEO pay for performance sensitivity and controlling shareholder

	Log(CEO compensation)					
	(1)	(2)	(3)	(4)	(5)	(6)
L(Market Cap)	*0.22***	*0.21***	*0.21****			
	(0.00)	*(0.02)*	*(0.00)*			
ROA				*0.03***	*0.03**	*0.03***
				(0.02)	*(0.09)*	*(0.02)*
L(Revenue)	*0.33*	*0.47*	*0.34*	*0.46**	*0.52**	*0.43**
	(0.16)	*(0.12)*	*(0.17)*	*(0.08)*	*(0.08)*	*(0.8)*
CEO Tenure	*0.075****	*0.06****	*0.07****	*0.07****	*0.07****	*0.08****
	(0.00)	*(0.01)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
CEO Age	*-0.03****	*-0.03****	*-0.03****	*-0.03****	*-0.03****	*-0.03****
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
CEO Duality	*0.43****	*0.38****	*0.43****	*0.28***	*0.27**	*0.29***
	(0.00)	*(0.00)*	*(0.00)*	*(0.03)*	*(0.08)*	*(0.02)*
CEO Turnover	*0.19****	*0.21****	*0.18****	*0.19****	*0.21****	*0.18****
	(0.00)	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
GDP	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.01*
	(0.16)	*(0.15)*	*(0.17)*	*(0.29)*	*(0.31)*	*(0.40)*
State 25%		*-0.57***			*-0.33*	
		(0.04)			*(0.40)*	
State 50%			*-0.30***			*-0.28****
			(0.02)			*(0.00)*
R-squared	*0.42*	*0.54*	*0.46*	*0.47*	*0.57*	*0.52*
N. Obs	*128*	*128*	*128*	*128*	*128*	*128*
N. Firms	*15*	*15*	*15*	*15*	*15*	*15*

Panel regression with firm-specific fixed effect. Robust standard errors are clustered by firm. T-statistics are reported in brackets. *, **, *** denote significance at 10%, 5% and 1% respectively. Variables are adjusted by inflation. *L(CEO compensation)* is the logarithmic transformation of the sum of salary and bonus awarded at the end of the year. *L(market cap)* is the logarithmic transformation of (number of outstanding shares*share price at the end of the fiscal year). *ROA* is Return on Asset (percentage). *L(Revenue)* is the logarithmic transformation of revenue. *CEO tenure* is the number of years served as CEO. *CEO age* is the age of the CEO. *CEO duality* is a dummy equal to 1 if CEO is also Chairman. *CEO turnover* is a dummy equal to 1 if the CEO changes. *GDP* is the GDP growth rate. *State 25%* is a dummy equal to 1 if the state holds, directly or indirectly, 25% of the shares. *State 50%* is a dummy equal to 1 if the state holds, directly or indirectly, 50% of the shares.

In column (1) and (4) of table 4 we estimate the CEO pay for performance sensitivity in listed telecoms in Europe using market capitalization and ROA as measures of firm performance. The results show that an increase of 10% in market capitalization leads to an increase of 2.2% in CEO compensation. Similarly, considering ROA as measure of firm performance, we find that an increase of one point percent in ROA leads to an increase of 3% in CEO compensation. Governance variables are all statistically significant, showing that CEO characteristics influence CEO compensation.

Specifically, CEO tenure controls for changes in compensation due to years served as CEO. The coefficient shows that an increase in one year in the CEO tenure leads to an increase of 7.5% in CEO compensation. The variable CEO age has a negative and statistically significant coefficient. Since CEO age can be considered a proxy of CEO experience, our result suggests that, once we control for tenure, the dynamic and technologically-intensive environment in telecom companies tend to reward younger CEOs. CEO duality is, instead, a positive and statistically significant. The coefficient shows that when CEO is also Chairman his compensation increases consistently. As discussed above, this variable captures the extent of CEO power and it is a proxy of the entrenchment effect.

These results leads to investigate further the role of controlling shareholder on CEO incentive compensation. In column (2) and (5) we report the effects of the state as dominant shareholder, when its control is 25% of the shares. Specifically, we show that in companies where the state is the controlling shareholder, CEO compensation is lower. This result is in line with the previous studies of Joskow et al., (1996) and Cambini, Rondi and De Masi (2015) who point out that in state-owned companies CEO compensation is lower because of the political constraints on CEO compensation imposed, directly or indirectly, by the state. This result may also be a consequence of political motivated "moral suasion" to prevent public criticism, as discussed by Hart et al., (1997).

Column (3) and (6) reports the estimated results when the state has the control, directly or indirectly, at 50% of the shares. Consistently with the column (3) and (4), the negative coefficients states that CEO compensation is lower in state-controlled companies than in private-controlled companies. However, the magnitude of the variable State 50% is higher than the magnitude of the variable State 25%. This shows that in companies where the state controls 50% of the shares (or more), CEO compensation is higher than in companies where the state controls 25% of the shares. This result suggests a possible entrenchment effect that deserves to be investigated more deeply.

To test the incentive and the entrenchment effects, we estimate Equation (2). Specifically, we include variables that interact with the dummy *State*. Table 5 reports the main results.

Table 5 - Incentive versus Entrechment

	Log(CEO compensation)				
	(1)	(2)	(3)	(4)	(5)
L(Market Cap)	*0.11*	*0.07*	*0.11*	*0.12*	*0.16***
	(0.19)	*(0.53)*	*(0.29)*	*(0.29)*	*(0.02)*
L(Revenue)	*0.43*	*0.13*	*0.46*	*0.45*	*0.32*
	(0.13)	*(0.44)*	*(0.12)*	*(0.12)*	*(0.16)*
CEO Tenure	*0.08****	*0.09****	*0.06*	*0.06*	*0.74****
	(0.00)	*(0.00)*	*(0.11)*	*(0.13)*	*(0.00)*
CEO Age	*-0.03****	*-0.04****	*-0.04****	*-0.04****	*-0.03****
	(0.00)	*(0.00)*	*(0.01)*	*(0.01)*	*(0.00)*
CEO Duality	*0.30****	*0.28****	*0.33****	*0.42****	*0.43****
	(0.00)	*(0.01)*	*(0.00)*	*(0.00)*	*(0.00)*
CEO Turnover	*0.21****	*0.19***	*0.20***	*0.19***	*0.15****
	(0.01)	*(0.03)*	*(0.03)*	*(0.03)*	*(0.00)*
GDP	*-0.03*	*-0.02*	*-0.02*	*-0.02*	*-0.02*
	(0.14)	*(0.18)*	*(0.16)*	*(0.16)*	*(0.17)*
State 25%	*-4.07***	*-5.88**	*-5.13**	*-4.66*	
	(0.02)	*(0.06)*	*(0.06)*	*(0.12)*	
L(Market Cap)*State25	*0.24***	*0.30***	*0.27**	*0.22*	
	(0.04)	*(0.05)*	*(0.06)*	*(0.17)*	
Age_State25		*0.02*	*0.01*	*0.01*	
		(0.29)	*(0.49)*	*(0.29)*	
Tenure_State25			*0.05*	*0.04*	
			(0.38)	*(0.47)*	
CEOduality_State25				*-0.29*	
				(0.19)	
State 50%					*-0.43**
					(0.09)
L(Market Cap)*State50					*0.13*
					(0.24)
Age_State50					*0.02*
					(0.26)
Tenure_State50					*0.08***
					(0.04)
CEOduality_State50					*0.08****
					(0.00)
R-squared	*0.40*	*0.35*	*0.38*	*0.43*	*0.53*
N. Obs	*128*	*128*	*128*	*128*	*128*
N. Firms	*15*	*15*	*15*	*15*	*15*

Panel regression with firm-specific fixed effect. Robust standard errors are clustered by firm. T-statistics are reported in brackets. *, **, *** denote significance at 10%, 5% and 1% respectively. Variables are adjusted by inflation. *L(CEO compensation)* is the logarithmic transformation of the sum of salary and bonus awarded at the end of the year. *L(market cap)* is the logarithmic transformation of (number of outstanding shares*share price at the end of the fiscal year). *ROA* is Return on Asset (percentage). *L(Revenue)* is the logarithmic transformation of revenue. *CEO tenure* is the number of years served as CEO. *CEO age* is the age of the CEO. *CEO duality* is a dummy equal to 1 if CEO is also Chairman. *CEO turnover* is a dummy equal to 1 if the CEO changes. *GDP* is the GDP growth rate. *State 25%* is a dummy equal to 1 if the state holds, directly or indirectly, 25% of the shares. *State 50%* is a dummy equal to 1 if the state holds, directly or indirectly, 50% of the shares.

In the column (1) we start interacting the logarithmic transformation of market capitalization with the dummy State 25%. This variable helps to identify CEO pay for performance sensitivity in companies where the state is the controlling shareholder (threshold is 25% of the shares). The results are consistent with our findings above: CEO compensation is lower in state controlled-firms than in private controlled firms. In state controlled-firms, CEO compensation is more sensible to firm performance variations (the coefficient is positive and statistically significant). This result may suggest different explanations. Since the level of CEO compensation is lower in state-controlled companies, such firms attract talented managers using a higher CEO pay sensitivity. Starting from Fama (1980), many studies suggest that talented managers are attracted by a higher CEO sensitivity. This result suggests an incentive effect in setting CEO compensation packages in state-controlled firm. A second explanation may be related to the size ad international activities of state-controlled firms. Specifically, these firms, which are ex-incumbents, are bigger and more international. As suggested by Yermack (1996), CEO pay sensitivity is positively associated to size and complex activities. This may explain the higher CEO pay for performance in state-controlled firms.

Regressions in columns (2)-(3)-(4) include the proxies of CEO entrenchment in state-controlled firms. These variables are not statistically significant. We can conclude that there are no differences between state-controls firms and private firms.

In column (5) we report the results when the threshold of state as controlling shareholder is 50%. Also in this case, CEO compensation is lower in state controlled firms than in private controlled firms. However, the variable *L(Market Cap)*State 50*, that indicates the CEO pay for performance sensitivity in state controlled firms, is not statistically significant. The variables *Tenure_State 50* and *CEO duality_State 50*, that are commonly used as proxy of the entrenchment effect, are positive and statistically significant. Specifically, the coefficient suggests that there is difference in the effect of an additional year served as CEO between state-controlled firms and no-state controlled firms. Similar results for CEO duality. These differences are higher for firms controlled by the state. These findings may suggest that as the state control increases, the entrenchment effect is stronger.

7. Conclusions

A large number of studies have focused on firm-specific determinants of CEO compensation and CEO pay for performance sensitivity. In this paper we study the effect of the state as controlling shareholder on the level of CEO compensation and on CEO pay for performance sensitivity in telecommunication companies. This paper is aimed at studying the incentive and entrenchment effect when the state is the dominant owner. Given the privatization processes and the relevance of the state ownership in the telecommunication industry, we focus on European listed telecommunication companies.

We perform a cross-country analysis of CEO compensation in order to examine how state control can influence the CEO compensation level and the pay for performance sensitivity link. We show shat in telecommunication companies, CEO compensation is sensitive to a variation of firm performance which is measured by a stock-market based measure and by an accounting-based measure. Specifically, an increase of 10% in market capitalization leads to an increase of 2.2% in CEO compensation. An increase of one point percent in ROA leads to an increase of 3% in CEO compensation. Our findings document that CEO characteristics influence CEO compensation. Specifically, the variable *CEO tenure* is positive and statistically significant. The coefficient shows that an increase in one year in the CEO tenure leads to an increase of 7.5% in CEO compensation. CEO age is negative and statistically significant coefficient. It suggests that CEO experience does not positively influence CEO compensation. CEO duality, a measure of CEO power and it entrenchment effect, is positive and statistically significant. The coefficient shows that when CEO is also Chairman his compensation increases consistently.

We discuss the influence of state on CEO incentives. We report evidence that state control decreases the level of CEO compensation. We document that this effect is higher when the state-control is measured with a threshold of 25% of the shares. This effect becomes weaker as the threshold of the state control is 50%.

Looking at CEO pay for performance sensitivity we find that in state-controlled firms, CEO compensation is more sensitive to change in firm performance than in private controlled firms. This result supports the optimal contracting hypothesis between manager and shareholder (Jensen and Meckling, 1976). However, when state ownership concentration reaches a high level (50% and more), the controlling shareholder tends to relax the incentive hypothesis. The differences in governance variables, which are proxy of entrenchment, are positively and statistically significant when the state control threshold is 50%.

This study has important implications. First, this research finds support for incentive theory of controlling shareholder. In telecommunication companies, CEO compensation is linked to firm performance. As when firms are subjected to increased monitoring by the state, the level of CEO compensation decreases whereas CEO pay for performance sensitivity increases. As pointed out by Joskow et al. (1996) and Cambini et al. (2015), in many firms, which are controlled by a national or local government, CEO remuneration is lower. This is because directors are politicians or they are appointed by politicians who are pressured by public opinion. In order to avoid that the public opinion may judge executive compensation excessive, such boards set a lower CEO compensation. Second, this study suggests that as state control increases, bureaucrats-shareholder may entrench with CEO. Our results have implications also for policy-makers, who may rethink about the role of state controlling shareholders. In conclusion, this study makes a contribution to the literature and practice with regards to international comparative corporate governance. It is hoped that these findings will generate additional research on these important issues.

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Appendix A – Descriptive statistics by country

	CEO compensation		**Market Capitalization**		**Revenue**		**ROA**	
Country	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Austria	*1377.43*	*340.41*	*6235305*	*3327863*	*6312958*	*1017733*	*4.37*	*2.84*
Belgium	*4142.64*	*2104.30*	$1.20*10^7$	*3056989*	*8283571*	*687915.70*	*17.45*	*4.97*
Denmark	*1940.15*	*495.57*	*8330587*	*2663953*	*6630903*	*2608382*	*8.63*	*2.42*
Finland	*551.26*	*38.42*	$2.71*10^7$	$2.82*10^7$	*2229733*	*22126.80*	*14.68*	*6.01*
France	*2211.39*	*621.70*	$5.88*10^7$	$2.44*10^7$	$6.20*10^7$	$1.51*10^7$	*7.86*	*2.51*
Germany	*4247.61*	*633.40*	$7.37*10^7$	$1.84*10^7$	$8.10*10^7$	*7504741*	*4.48*	*3.11*
Italy	*4572.53*	*1608.60*	$3.52*10^7$	$2.27*10^7$	$3.95*10^7$	*5808486*	*6.36*	*2.83*
Holland	*3951.43*	*2133.20*	$2.23*10^7$	*7801711*	$1.66*10^7$	*3176499*	*10.47*	*2.87*
Poland	*1148.91*	*389.84*	*7547657*	*3630182*	*5502424*	*1539247*	*3.01*	*3.23*
Portugal	*1567.58*	*273.23*	*6729224*	*3394917*	*4115316*	*2352243*	*4.43*	*3.17*
Spain	*8071.97*	*1104.73*	$6.80*10^7$	$1.26*10^7$	$7.52*10^7$	*4270036*	*7.70*	*0.78*
Sweden	*2917.33*	*1807.14*	$2.95*10^7$	*7932337*	$1.31*10^7$	*3024764*	*9.66*	*4.98*

UK	*4224.12*	*3384.27*	*1.75*10^7*	*1.92*10^7*	*1.69*10^7*	*1.74*10^7*	*6.45*	*6.57*

	CEO Tenure		**CEO Age**		**CEO Duality**		**State Ownership**	
Country	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Austria	*2.86*	*1.34*	*45.86*	*3.43*	*1*	*0*	*1*	*0*
Belgium	*7.00*	*2.74*	*54.00*	*2.74*	*0*	*0*	*1*	*0*
Denmark	*4.67*	*2.80*	*53.67*	*6.34*	*0*	*0*	*0*	*0*
Finland	*1*	*0*	*46.00*	*13.00*	*0*	*0*	*1*	*0*
France	*3.00*	*1.31*	*58.5*	*8.63*	*1*	*0*	*1*	*0*
Germany	*3.45*	*1.96*	*45.73*	*2.53*	*1*	*0*	*1*	*0*
Italy	*2.78*	*1.76*	*60.07*	*4.78*	*0.29*	*0.47*	*0*	*0*
Holland	*4.54*	*2.66*	*60.45*	*4.08*	*1*	*0*	*0*	*0*
Poland	*4.00*	*2.16*	*43.00*	*2.16*	*0*	*0*	*0.43*	*0.53*
Portugal	*3.00*	*1.58*	*46.00*	*1.58*	*0*	*0*	*0*	*0*
Spain	*13.00*	*1.00*	*67.00*	*1.00*	*1*	*0*	*0*	*0*
Sweden	*3.30*	*1.84*	*56.84*	*3.67*	*0*	*0*	*1*	*0*
UK	*3.16*	*1.59*	*52.84*	*7.26*	*0.16*	*0.37*	*0.23*	*0.43*

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